IN THE CLAIMS

1. (original) A polypeptide for use as an autotransporter antigen, the polypeptide comprising:

(a) an amino acid sequence selected from the group consisting of SEQ ID NO: 54, SEQ ID NO: 6, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 78, and SEQ ID NO: 79,

(b) an amino acid sequence having at least 50% sequence identity to an amino acid sequence of (a); or

(c) an amino acid sequence comprising one or more fragments of at least 7 consecutive amino acids from an amino acid sequence of (a) or combinations thereof.

2. (original) The polypeptide of claim 1 where use is as an antigen for raising a Chlamydia pneumoniae specific immune response

3. (original) The polypeptide of claim 2 wherein the use is for raising a systemic immune response in an individual infected with Chlamydia pneumoniae.

4. (currently amended) The polypeptide of claim 1 ~~any one of claims 1-3~~ which is secreted into the cytoplasm of the host cell through a Type V autotransporter secretion system mechanism.

5. (currently amended) The polypeptide of claim 1 ~~any one of claims 1-3~~ wherein the polypeptide is selected from the group consisting of SEQ ID NO: 54, SEQ ID NO: 6, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 78, and SEQ ID NO: 79 and share one or more common N-terminal sequence motifs selected from the group consisting of G, DG, VG, G, AV, G, IVG, GTLGG, S, IVG, and M.

6. (original) The polypeptide of claim 5 wherein the common N-terminal sequence motif is selected from the group consisting of GTLGG, S, IVG and M.

7-10. (canceled)

11. (original) A method of eliciting an immune response in an individual comprising administering to the individual a polypeptide comprising:

(a) an amino acid sequence selected from the group consisting of SEQ ID NO: 54, SEQ ID NO: 6, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 78, and SEQ ID NO: 79,

(b) an amino acid sequence having at least 50% sequence identity to an amino acid sequence of (a), or

(c) an amino acid sequence comprising one or more fragment of at least 1, 2, 3, 4, 5, 6, or 7 amino acids from an amino acid sequence of (a) or mixtures thereof.

12. (currently amended) A method of diagnosing an immune response in an individual comprising:

(a) contacting a biological sample obtained from the individual with a binding agent that binds to a polypeptide according to claim 1 ~~any one of claims 1-3~~;

(b) detecting in the biological sample the amount of the polypeptide that binds to the binding agent; and

(c) comparing the amount of the polypeptide to a predetermined cut-off value and thereby determining the presence of an immune response in the individual.

13-14. (canceled)

15. (original) A composition for eliciting an immune response comprising one or more Chlamydia pneunoniae autotransporter proteins or immunogenic fragments thereof and one or more immunostimulants.

16. (original) The composition according to claim 15 wherein the Chlamydia pneumoniae autotransporter protein or the immunogenic fragment thereof comprises:

(a) an amino acid sequence selected from the group consisting of SEQ ID NO: 54, SEQ ID NO: 6, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 78, SEQ ID NO: 86 and SEQ ID NO: 79;

(b) an amino acid sequence having at least 50% sequence identity to an amino acid sequence of (a); or

(c) an amino acid sequence comprising one or more fragments of at least 1, 2, 3,4, 5, 6 or 7 amino acids from an amino acid sequences of (a) or combinations thereof.

17. (currently amended) The composition according to claim 15 ~~or 16~~ wherein the protein or immunogenic fragment thereof is defined according to any one of claims 1-3.

18. (original) A composition for eliciting an immune response in a subject comprising two or more Chlamydia pneunoniae autotransporter proteins or immunogenic fragments thereof.

19. (original) The composition according to claim 18 wherein the Chlamydia pneumoniae autotransporter protein or the immunogenic fragment thereof comprises:

(a) an amino acid sequence selected from the group consisting of SEQ ID NO: 54, SEQ ID NO: 6, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 78, SEQ ID NO: 86 and SEQ ID NO: 79;

(b) an amino acid sequence having at least 50% sequence identity to an amino acid sequence of (a); or

(c) an amino acid sequence comprising one or more fragments of at least 1, 2, 3, 4, 5, 6 or 7 amino acids from an amino acid sequences of (a) or combinations thereof.

20. (currently amended) The composition according to claim 18 ~~or 19~~ wherein the composition further comprises one or more immunostimulants.

21. (currently amended) A method of making a composition according to claim 15 ~~any one of claims 15 or 16~~ wherein the method comprises combining one or more Chlamydia pneunoniae autotransporter proteins or immunogenic fragments thereof with one or more immunostimulants.

22. (original) A method of making a composition according to claim 18 ~~or 19~~ wherein the method comprises combining two or more Chlamydia pneunoniae autotransporter proteins or immunogenic fragments thereof.

23. (original) The method according to claim 22 wherein the method comprises adding one or more immunostimulants to the Chlamydia pneumoniae autotransporter proteins or immunogenic fragments thereof.

24. (original) A Chlamydia pneumoniae autotransporter protein selected from the group consistingof Cpn0794, Cpn0795, Cpn0796, Cpn0797, CPn0798 andCpn0799 or an immunogenic fragment thereof wherein the autotransporter protein an amino acid motif comprising IVG, A, LGG and S.

25. (original) The autotransporter protein according to claim 24 wherein the repeat amino acid motif comprises IVG, A, LGG and S.

26. (original) A polypeptide for use as an autotransporter antigen comprising an amino acid sequence corresponding to SEQ ID NO: 86, an amino acid sequence having at least 50% sequence identity to SEQ ID NO: 86, or an amino acid sequence comprising one or more fragments of at least 7 consecutive amino acids of SEQ ID NO: 86.

27. (original) The polypeptide of claim 26 where use is as an antigen for raising a Chlamydia pneumoniae specific immune response

28. (original) The polypeptide of claim 2 wherein the use is for raising a systemic immune response in an individual infected with Chlamydia pneumoniae.

29. (canceled)

30. (original) A method of raising an immune response in an individual, the method comprising administering to the individual a polypeptide comprising an amino acid sequence corresponding to SEQ ID NO:86, an amino acid sequence having at least 50% sequence identity to SEQ ID NO: 86, or an amino acid sequence comprising one or more fragments of at least 7 consecutive amino acids of SEQ ID NO:86.

31. (original) A method of diagnosing an immune response in an individual, the method comprising:

(a) contacting a biological sample obtained from an individual with a binding agent that binds to a polypeptide defined in claim 26 ~~any one of claims 26-28~~;

(b) detecting in the sample the amount of the polypeptide that binds to the binding agent; and

(c) comparing the amount of polypeptide to a predetermined cut-off value and thereby determining the presence of an immune response in the individual.